

Ge PHOTODETECTOR Fig 3-1**Typical Specifications at Room Temperature Ge Photodetector**

	ACTIVE DIA. TYPE	SPECTRAL RESPONSE (MM) (μ)	R_{sh} SHUNT RESISTANCE $K\Omega$		I_d DARK CURRENT @ V_r (MA) MAX.	V_r (V) REVERSE VOLTAGE FOR TEST	R_s RESPONSIVITY TYPICAL @ λ_p (A/W)	NEP (PW/ \sqrt{Hz}) TYPICAL @ λ_p	CAPACITANCE Cd (PF) @ V_r (MAX)
			MIN	TYP.					
GM2 GM2HS GE2	0.5	0.8-1.8	30	60	5	10	0.75	1.0	27
		0.8-1.6	100	150	1.0	3		0.3	55
			60	100	2.5	10		0.5	35
GM3 GM3HS GE3	0.1	0.8-1.8	120	180	1.0	10	0.75	0.3	2.0
		0.8-1.6	350	500	0.3	0.3		0.1	6.0
			200	260	0.5	10		0.2	4.0
GM4 GM4HS GE4	0.3	0.8-1.8	60	80	2.0	10	0.75	0.6	10
		0.8-1.8	250	400	0.4	3		0.15	25
		0.8-1.6	100	150	1.0	10		0.3	15
GM5 GM5HS GE5	1.0	0.8-1.8	20	40	5.0	10	0.75	1.5	65
		0.8-1.6	60	100	1.5	3		0.5	300
			30	50	2.5	10		1.0	85
GM6 GM6HS GE6	2.0	0.8-1.8	6	12	15	10	0.75	2.0	300
		0.8-1.8	30	60	3	1		0.8	1200
		0.8-1.6	16	30	10	10		1.0	400
GM7 GM7HS GE7	3.0	0.8-1.8	4	8	30	10	0.75	3.0	800
		0.8-1.8	15	25	4	1		1.0	4000
		0.8-1.6	8	16	15	10		2.0	1000
GM8 GM8HS GE8	5.0	0.8-1.8	2	4	40	3	0.75	4.0	3000
		0.8-1.8	7	10	15	1		2.0	6000
		0.8-1.6	4	6	30	3		4.0	3500
GM10HS	10x10	0.8-1.8	2.0	3.5	80	1	0.75	4.0	30000

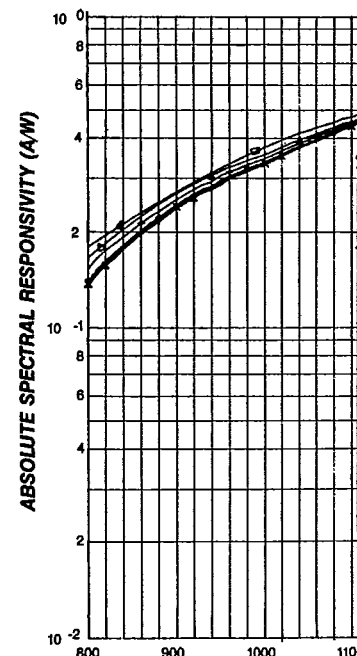
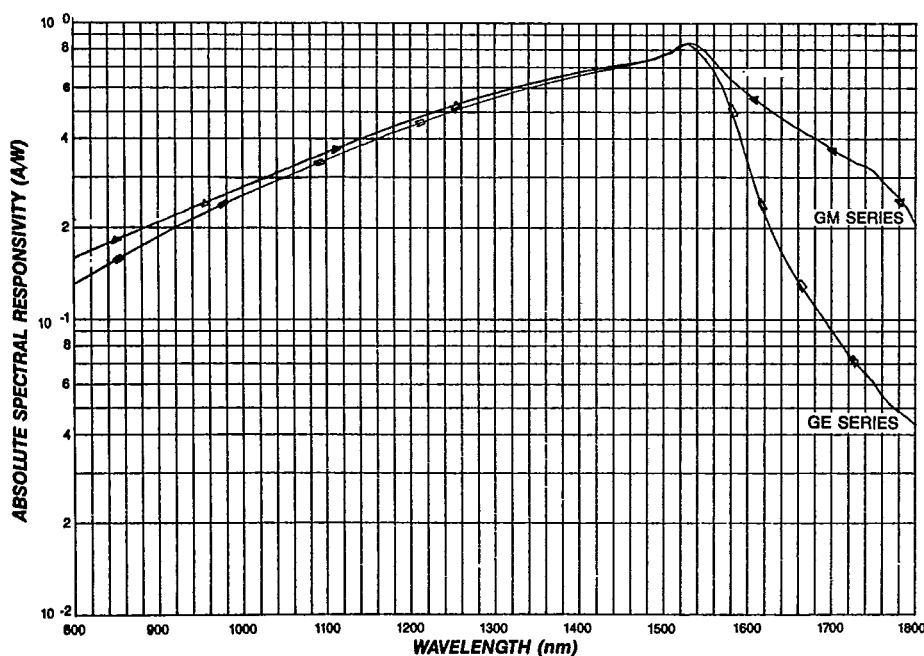
Thermo-Electric Cooled Detectors (DEWARS AVAILABLE)

GM5TEC	1.0	0.8-1.8	300	0.2	5	0.75	0.4	65
GM8TEC	5.0	0.8-1.8	60	1.0	1	0.75	1.0	3000

OTHER TYPES ARE AVAILABLE ON TE COOLERS
SPECIAL HIGH SHUNT DETECTORS ARE AVAILABLE

FIG. 5-2 GM SER

FIG. 5-1 Spectral Response



E	f _c CUT OFF FREQUENCY @ V _r & 50 Ω R _L (MHz)	MAXIMUM REV. VOLTAGE V _{rm} (VOLTS)	PACKAGES	
			STANDARD	OPTIONS
	120 60 100	15 5 15	TO-18	TO46 TO-18 LENSE CERAMIC
	1500 500 750	15 5 15	TO-18	TO-18 LENSE CERAMIC TO-46
	300 120 200	15 5 15	TO-18	TO-46 LENSE CERAMIC
	55 10 35	15 5 15	TO-18	TO-5 LENSE CERAMIC
	10 1 7	15 3 15	TO-5	TO-5 LENSE CERAMIC
	4 0.7 2	12 3 12	TO-5	T-8 CERAMIC
	1.6 0.5 0.9	5 1.5 5	TO-8	CERAMIC
	0.1	1.5	TO-9	BNC CONNECTOR

55	7.0	TO-5 @-15°C
1.6	2.0	TO-8 @-25°C

ES Spectral Response Vs. Temperature

□ - OPERATED AT +50C. ◊ - OPERATED AT 0C.
 Δ - OPERATED AT +35C. X - OPERATED AT -12C.
 + - OPERATED AT +25C. Σ - OPERATED AT -25C.

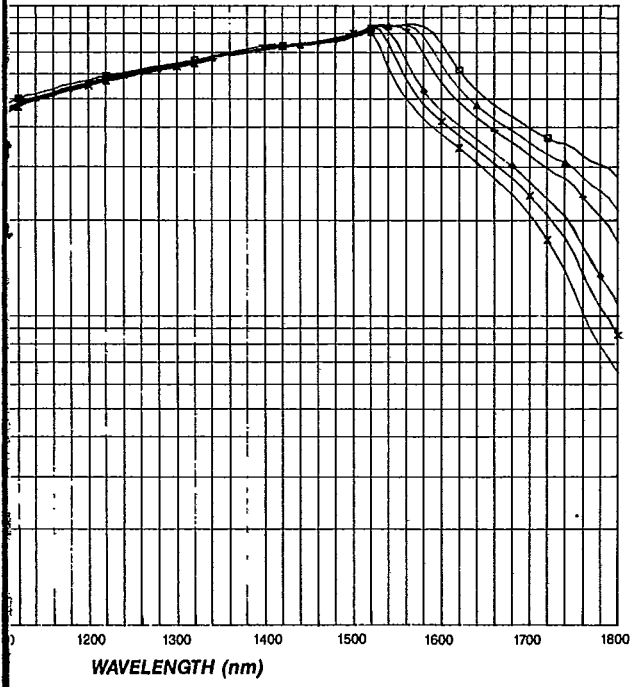
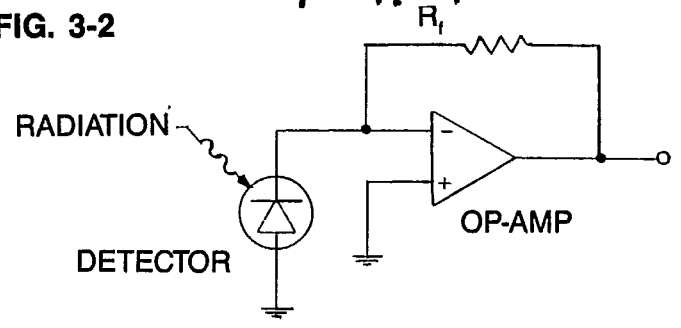
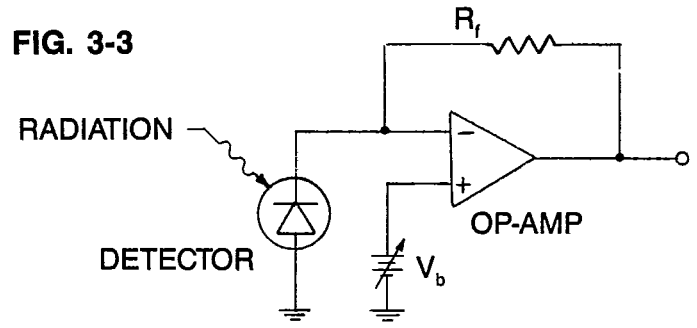


FIG. 3-2



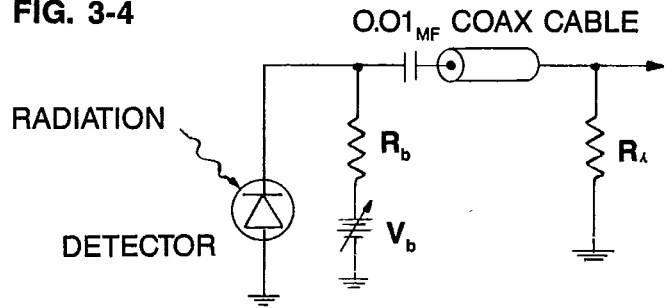
BASIC OPERATING CIRCUIT (WITHOUT BIAS)

FIG. 3-3



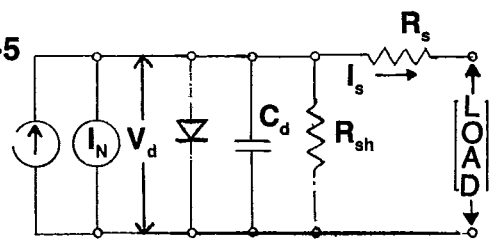
BASIC OPERATING CIRCUIT (WITH BIAS)

FIG. 3-4



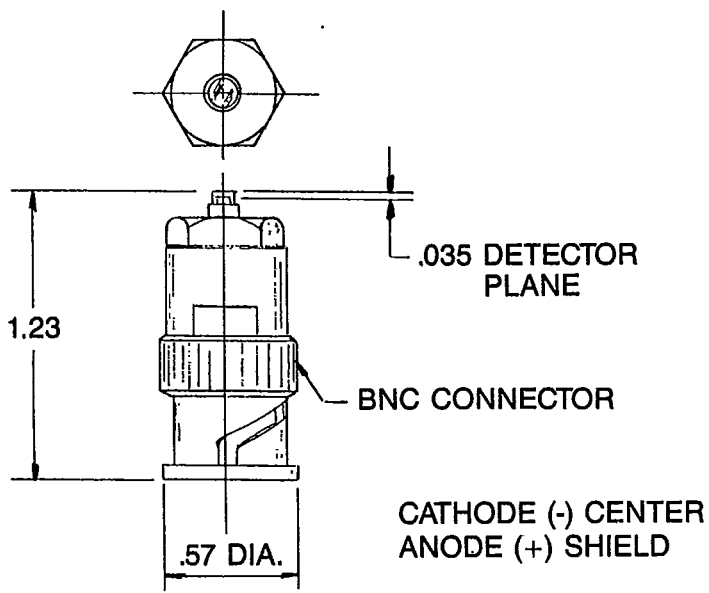
HIGH SPEED OPERATING CIRCUIT

FIG. 3-5

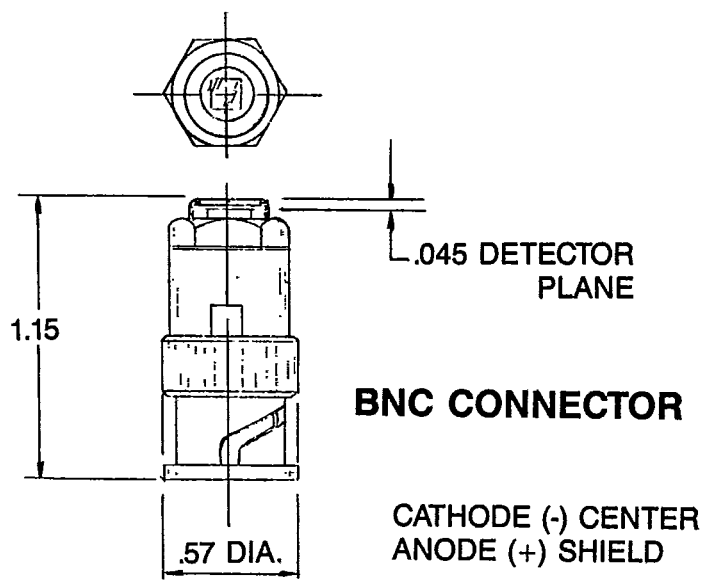


- I_p - PHOTOCURRENT
- I_N - NOISE CURRENT
- V_d - ACTUAL VOLTAGE ACROSS JUNCTION
- C_d - PHOTODIODE CAPACITANCE
- R_{sh} - SHUNT RESISTANCE
- R_s - SERIES RESISTANCE
- I_s - OUTPUT CURRENT

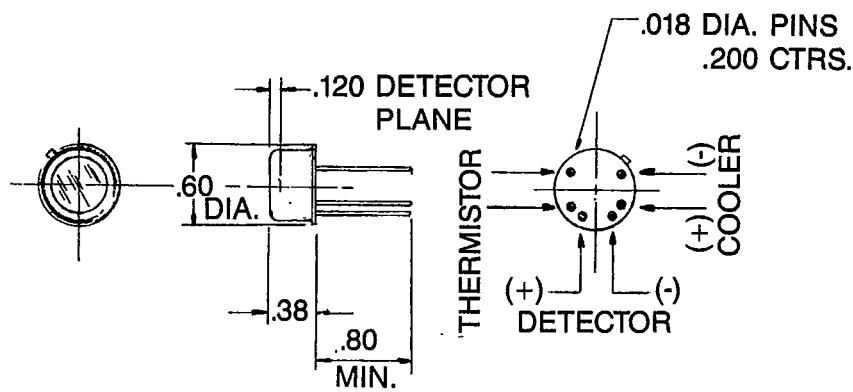
BASIC PHOTODIODE EQUIVALENT CIRCUIT



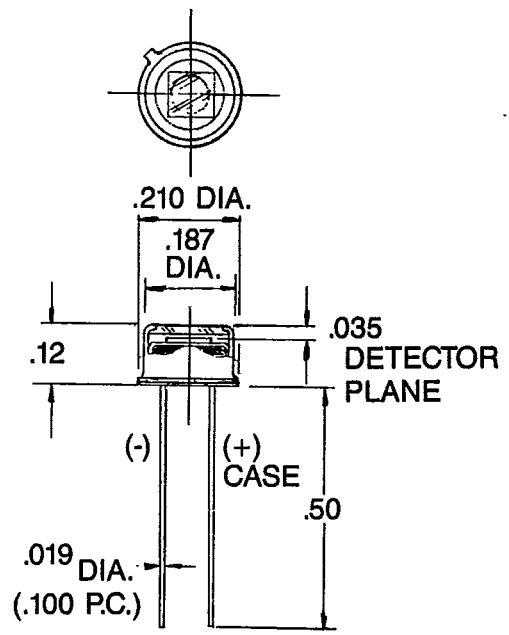
BNC (TO-18) DETECTOR



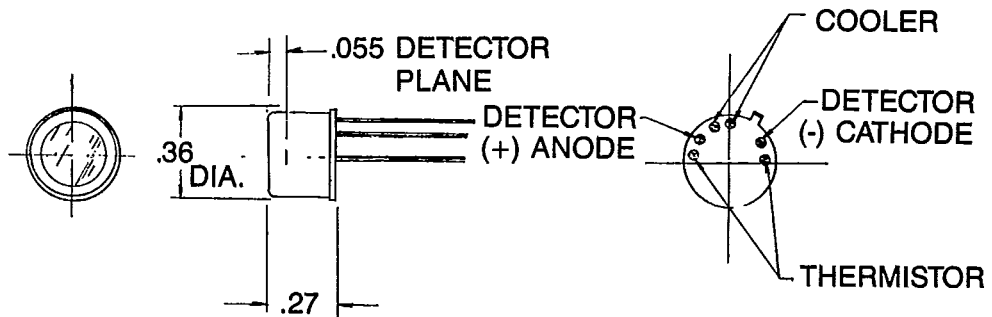
BNC CONNECTOR



OUTLINE TO-8 TEC



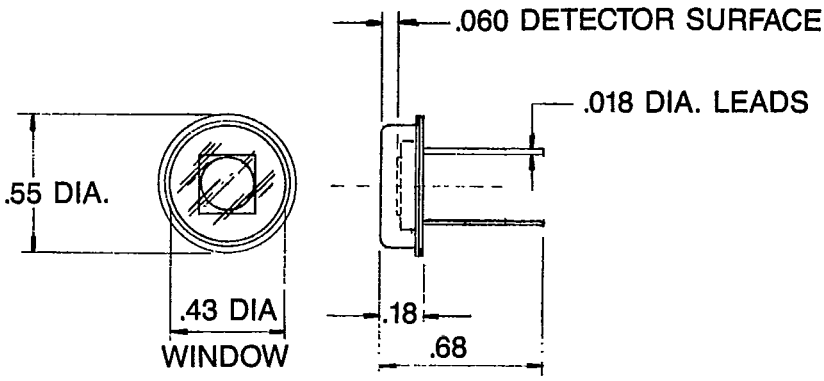
OUTLINE TO-18



BOTTOM VIEW

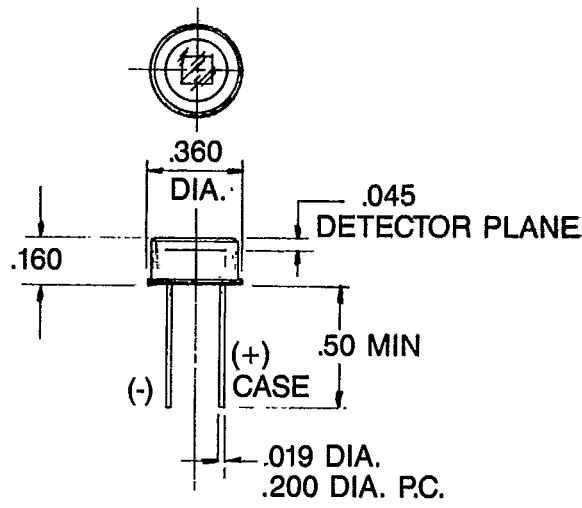
OUTLINE TO-5 TEC

UNIT = INCH

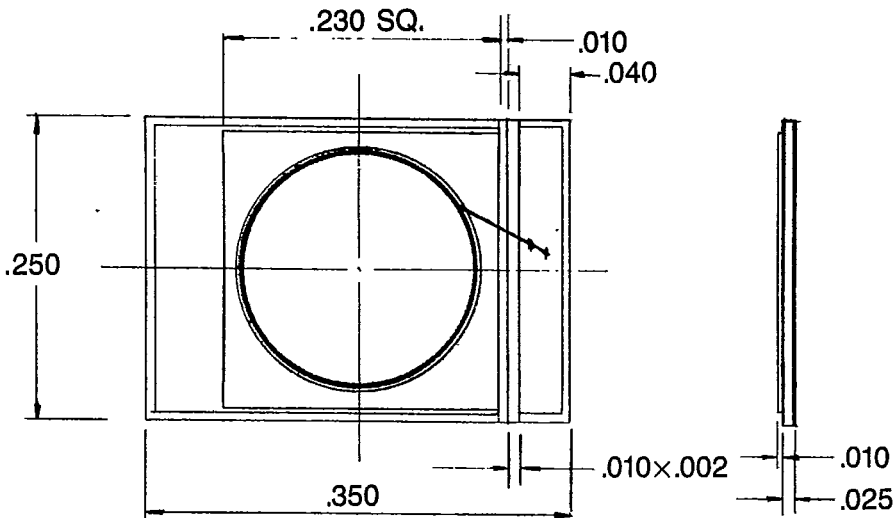


(-) CATHODE
(+) CASE

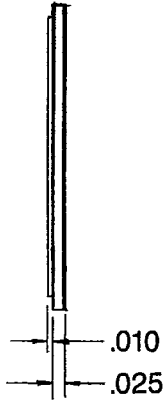
TO-8 OUTLINE



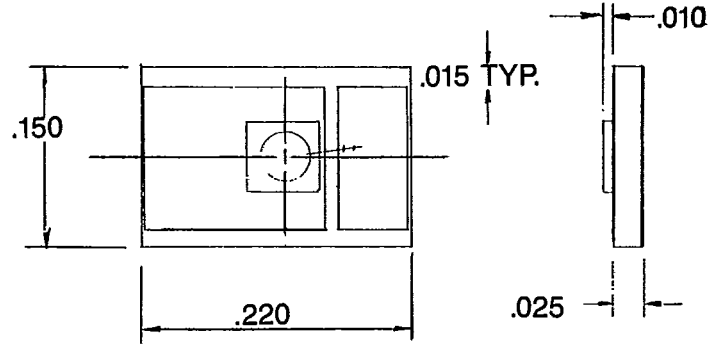
TO-5 OUTLINE



OUTLINE GM-8 CS



OUTLINE GM-5 CS



NOTES:

1. .0008 Au WIRE WEDGE BONDED
2. CONDUCTIVE EPOXY-CHIP TO SUBSTRATE
3. Au BACK SURFACE & CHIP MTG SURFACE
4. UNIT = INCH



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